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BOOK REVIEWS AND NOTICES*

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ABSTRACT—Books reviewed include: GENERAL—The Outer Spores: Mushrooms of Haida Gwaii (Kroeger & al. 2012); LICHENS & LICHENIZED FUNGI—Rare Lichens of Oregon (Exeter, Glade & Loring 2016); Lichens of Uttar Pradesh (Nayaka & Upreti 2013); ASCOMYCOTA—Plant pathogenic and endophytic *Botryosphaeriales* known from culture (eds: Phillips & al. 2013); A polyphasic taxonomy of *Daldinia* (*Xylariaceae*) (Stadler & al. 2014); Hypocrealean lineages of industrial and phytopathological importance (eds: Lombard, Groenewald & Crous 2015).

GENERAL

The Outer Spores: Mushrooms of Haida Gwaii.

By Paul Kroeger, Bryce Kendrick, Oluna Česka & Christine Roberts. 2012. Mycologue Publications, Sidney-by-the-Sea BC [www.mycolog.com] in cooperation with the Haida Gwaii Museum (Skidegate BC), Canada. 189 p., ~300 color photos and drawings, paperback. ISBN—978-0-9692237-3-3 Price (excl. postage): \$20 (Canadian) Email: bryce@mycolog.com.



I have been happily immersed in the pages of this gem since last week, which I found temporarily forgotten among the ‘books I must read soon’ shelf. When labors of love are as entertainingly written as this one, the reader definitely benefits, and THE OUTER SPORES will charm and edify a great many other mycologists and nature-lovers. The 15 × 23 cm volume covers the mushrooms

* Book reviews or books for consideration for coverage in this column should be sent to the Editor-in-Chief <editor@mycotaxon.com> 6720 NW Skyline, Portland OR 97229 USA.

as well as the history of Haida Gwaii (the post-2010 name for the Queen Charlotte Islands), “a wild and unspoiled corner of the world and the home of the Haida, a people with a deep and rich culture.” This overview of 635 species identified from >2900 mushroom collections gathered during a 5-year survey constitutes the ‘first ... guide dedicated to the fungi of Haida Gwaii.’

The obligatory first chapter “about mushrooms” (here defined as “fungal fruiting bodies large enough to see”) packs an impressive amount of information in ten pages and bears the imprimatur of the indomitable Bryce Kendrick (author of *THE FIFTH KINGDOM*) by answering What are fungi? and What are Mushrooms? before moving on to ascomycete and basidiomycete basics, biological strategies, and a delightful drawing from Oluna’s field notebook. Next follows a brief description of the 150 islands “that comprise a sort of miniature continent” accompanied by a map showing collection sites on the Queen Charlotte Windward Mountains, Skidegate Plateau, and Queen Charlotte Lowlands. A brief cultural history of the indigenous peoples follows; although the Haida did not traditionally consume mushrooms for food, they did venerate Tree-Fungus Man and used bracket fungi for tinder, medicines, and pigments.

Edible mushroom coverage begins with the inevitable safety cautions; here it appears that getting lost in the archipelago is more worrisome than the possibility of death by mushroom: the local forest district and search & rescue crews (motivated by the “significant cumulative cost of numerous searches”) now find it more cost effective to distribute free survival kits (contained within a 1-litre water bottle) to pickers. With much of the area closed to mushroom picking, the authors devote five pages to where, when, and how to collect and eat/or preserve the mushroom quarry, closing with two duplicate (somewhat oddly, given the index on pp. 133–139) lists of the region’s 28 choice edibles with references to later comments and/or photos, the first alphabetized by Latin name and the second by common name. Coverage of the profitable commercial mushroom harvest (primarily of golden, rainbow, blue, and winter chanterelles) precedes a discussion of current and future forest management practices.

Species accounts of 14 edible and 22 “notable” mushrooms, accompanied by generally excellent photos and distribution maps (plus one shot of a dominant herbivore cluster of millipedes munching an *Ganoderma tsugae* in the ‘edible’ mushroom chapter) precede observations on some little known roles and interactions of fungi, such as the truffle-tree-animal triumvirate, sand ecosystems, and nitrogen-seeking *Hebeloma*, *Laccaria*, and *Onygena* ‘corpse finders’. Appropriately enough, next on the menu are toxins, symptoms, and good to somewhat blurry portraits of and maps for the region’s 15 poisonous

mushroom species. Found here is *Inocybe calamistrata* (a mushroom I'd never thought of consuming, but its blue pigmented 'foot' might attract those vainly hoping for a hallucinogenic high). Also portrayed is a mushroom labeled as *Clitocybe* (now the type species of *Ampulloclitocybe*) *clavipes* looking far too slender, small, white, and suspiciously far more like *Clitocybe fragrans*, another known poisonous mushroom. This is one book that stresses the deadly poisonous *Amanita franchetii*—an otherwise beautiful mushroom common throughout Haida Gwaii.

Moving from the deadly poisonous to the strictly hallucinogenic, the next chapter focuses on two "main candidates" for "visionary mushrooms traditionally used as ritual or spiritual intoxicants in Haida Gwaii:" the liberty cap (*Psilocybe semilanceata*, probably introduced by immigrant farmers) and the fly agaric (*Amanita muscaria*, an abundant endemic). Six pages are devoted to the modern natural and legal history surrounding these "magic" mushrooms.

The atlas comprises 139 photos (of variable quality) covering 105 species, including a salal leaf infected by *Valdensia heterodoxa* (which escaped the clutches of the final checklist, although not the index). As this volume is not intended to serve as an identification guide, these photos merely whet the appetite for further information, and the atlas concludes with a list of recommended guides and references.

The authors next summarize the scope of their prodigious five-year inventory efforts: "Over the five years, we made eight field trips to Haida Gwaii of ten to fourteen days. In all, 113 areas were visited ... and we made and preserved 2906 collections representing 635 species and documented 812 species of fungi (not including lichens) from all available sources... We collected on nineteen islands ranging in size of 0.5 hectares to the over 648,000 hectares of Graham Island. The mushrooms ... remained largely unknown until 2003, when we began our survey." The general bibliography precedes six wonderful photos showing the authors (and Oluna's photographer and botanist husband Adolf) in the field.

The final index and acknowledgments follow a 23-page checklist of the 635 species identified thus far from the surveys. Having participated in several long-term fungal surveys (see Norvell & Exeter 2003), I understand all too well how much work was involved in identifying the collections after all the fieldwork was completed. To that end, I do wish the authors had provided a bit more detail on which references they used to identify their finds. In his 2013 book review, Steve Trudell suggested that in the absence of the usual identification caveats (e.g., cf., aff., sensu lato) the identifications should be "taken with a grain of mycological salt." He recently amended this (Trudell 2017) by adding that although the authors had originally included such identification disclaimers, the publisher

unfortunately removed them from the published checklist. Misidentifications or misapplications are to be expected, although the authors' strengths in certain genera (e.g., dark-spored saprobes for Paul, *Inocybe* for Oluna, and *Russula* for Christine) lend more credibility to the checklist. All of us who have conducted similar studies know full well that the real work of identification will continue years after the fieldwork is complete and will applaud the authors for having the courage to publish their results (however preliminary they might be) so promptly and in so engaging a format.

For the most part there are relatively few typographical or spelling errors—the few I noted were '*Beauvaria*' for *Beauveria*, '*Scerotinia*' for *Sclerotinia*, and '*prescottii*' for *prescotii* – and the nomenclature is more or less up-to-date for 2012. I counted three synonym doublets: *Bondarzewia mesenterica* + *B. montana*, *Cystolepiota sistrata* + *Lepiota seminuda*, and *Galerina autumnalis* + *G. venenata* (the last two synonyms of *G. marginata*). Oddly, while '*Lichenomphalia*' is shown on p. 9, only *Omphalina ericetorum* (accepted as *L. umbellifera* after a 25-year nomenclatural battle of epic proportions) appears on the list. Other nomenclatural holdovers include *Boletus* (instead of *Chalciporus*) *piperatus*, *Clitocybe* (instead of *Arrhenia*) *hohensis*, *Coprinus* (instead of *Coprinopsis*) *atramentarius*, *lagopus* & *phaeosporus*, *Gomphus* (instead of *Turbinellus*) *kauffmanii*, *Mycena* (instead of *Roridomyces*) *rorida*, *Omphalina viridis* (instead of *Arrhenia chlorocyanea*), *Paxillus* (instead of *Tapinella*) *panuoides*, *Phlogiotis* (instead of *Guepinia*) *tremelloides*, and *Rozites* (instead of *Cortinarius*) *caperata*. Fortunately, as all names can easily be updated using Index Fungorum, these discrepancies are hardly serious.

All in all, I find *THE OUTER SPORES: MUSHROOMS OF THE HAIDA GWAII* eminently readable, enchanting, and educational and recommend it as an excellent inspiration and guide for other surveys of hitherto untrammelled wildernesses.

Kendrick, B. 2000. *The Fifth Kingdom*, 3rd edn. Hackett Publishing, 400 p. + CD ROM. ISBN 978-1-58510-022-4

Norvell LL, Exeter RL. 2004. Ectomycorrhizal epigeous basidiomycete diversity in Oregon's coastal montane *Pseudotsuga menziesii* forests – preliminary observations. IN *Fungi in Forest Ecosystems: Diversity, Ecology, and Systematics*, Cathy Cripps (ed.). *Memoirs of the New York Botanical Garden* 89: 159-189.

Trudell S. 2017. Book Review: *The Outer Spores: Mushrooms of Haida Gwaii*. *THE MYCOPHILE* May-June 53(3): 14–15. 2017 reissue accessed on 8 January 2017: http://www.namyco.org/the_outer_spores_mushrooms_of.php